

ALTERNARIA BROWN SPOT OF DANCY TANGERINE

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A strain of the fungus *Alternaria citri* Ellis and Pierce attacks the foliage of rough lemon and Rangpur lime (1,2,3). The leaf spot was known as anthracnose and was incorrectly attributed to *Colletotrichum gloeosporioides* (Penz.) Arx before Ruehle (2) showed that *A. citri* was the causal organism.

Another strain of *A. citri* causes black rot of citrus fruit (1). Navel oranges are most often attacked, but other sweet oranges are also susceptible. Infected fruits color prematurely, often several weeks before the color-break in healthy fruits. Some of the infected fruits drop before maturity while others remain on the tree. Infected fruits often show no external symptoms of the disease, but when cut show a rather solid and black decay near the stylar or blossom end. The affected area may extend through the central part of the fruit before it progresses to the surface where it results in a tan discolored spot that finally turns black (1).

In 1974, a strain of *Alternaria citri* was found attacking young fruit and shoots of 'Dancy' tangerine, *Citrus reticulata* Blanco 'Dancy', in Polk and Highlands Counties (3,4). It is now found throughout the citrus growing areas of Florida. Besides 'Dancy' tangerine, this fungus also infects 'Minneola' tangelo, Citrus X Tangelo 'Minneola', and occasionally 'Orlando' tangelo, Citrus X Tangelo 'Orlando' (4).

SYMPTOMS. The first symptoms of this disease on the fruit of Dancy tangerine are small black spots. These spots become slightly depressed and the pocket of dead tissue shrinks away from the surrounding living tissue, creating a circular fissure. Wound periderm forms beneath the lesions and lifts the dead tissue above the normal contour of the fruit. The resulting erumpent tissue is easily dislodged from the rind and leaves white areas on the fruit (3) (Figs. 1A, 1B). Fruits that are less than 20 mm in diameter usually drop within a few days. When larger fruits become infected, they often stay on the tree for a few weeks to several months and

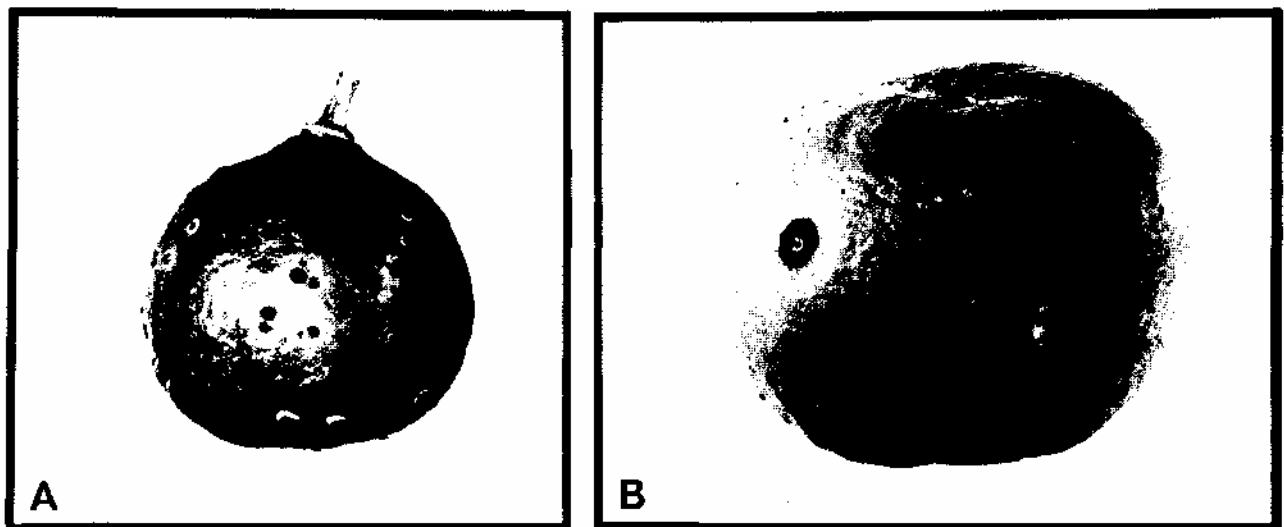


Fig. 1. A) Young tangerine fruit showing early and late pustules; B) Symptoms on mature fruit of Dancy tangerine.



Fig. 2. Foliar symptoms on Dancy tangerine.

may even stay on the tree until maturity. Fruit rind becomes resistant to attack 3 to 4 months after petal-fall but some existing lesions and pustules may continue to enlarge and form progressive-type brown spots.

Leaves are susceptible only during early emergence from the bud. Symptoms on young foliage range from small leaf spots 2 mm in diameter to lesions that cover major portions of the leaf (Fig. 2). The spotting is often delimited by the veins and heavily infected leaves often drop prematurely. Infection also develops on the stems. Infection of young succulent shoots may result in some dieback (3).

CONTROL. Whiteside (4) found that two postbloom copper fungicide sprays, one in late April or early May and another 4 to 6 weeks later, were an effective control. Spraying after early July has not been found effective in reducing disease severity. Difolatan (1 lb ai/100 gal) was no more effective than a copper fungicide (0.8 lb Cu/100 gal) when applied at these times. Difolatan is useful as either a precautionary late dormant treatment to

prevent shoot infection or as an emergency treatment if the disease begins to appear on the spring flush or young fruit. However, it should not be applied later than 2 to 3 weeks after petal-fall to prevent or minimize rind blemish when the summer oil spray is applied. Prolonged overhead sprinkler irrigation promotes the disease.

SURVEY AND DETECTION. Examine the new leaf flushes shortly after emergence from the bud for necrotic spots. Look at the fruit 3 to 4 months after petal-fall for small black spots which later form erumpent tissue which is easily dislodged from the rind.

LITERATURE CITED

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